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<110> Miller, Barbara
       Osmani, Stephen
       Clawson, Gary
       Zhang, Min-Ying
       Norris, James

<120> Use of Human Homolog Of A Nuclear Migration Gene For Treatment And Diagnosis Of Cancer

<130> PSU-0016

<140> 09/623,568
<141> 2001-03-23

<150> 60/076,885
<151> 1998-03-05

<150> PCT US99/04996
<151> 1999-03-05

<160> 16

<170> PatentIn version 3.1

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aagaagggat ggcagagaag cttatcacac agactttcag ccaccacaat cagctggcac   240

agaagacccg gcgggagaag agagcccggc aggaggccga gcggcgggag aaggcggagc   300

gggcggccag actggccaag gaagccaagt cagagacctc agggccccag atcaaggagc   360

taactgatga agaggcagag aggctgcagc tagagattga ccagaaaaag gatgcagaga   420

atcatgaggc ccagctcaag aacggcagcc ttgactcccc agggaagcag gatactgagg   480

aagatgagga ggaagatgag aaggacaaag gaaaactgaa gcccaaccta ggcaacgggg   540

cagacctgcc caattaccgc tggacccaga ccctgtcgga gctggacctg gcggtccctt   600

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tccgggtggg gctcaagggg cagccagcga tcattgatgg ggagctctac aatgaagtga   720

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agaagattaa ccctgagaat ccaagctgt cagacctgga cagtgagact cgcagcatgg   900

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cacccaactt tctttcccac tcttctctgg gacttgtggg cctcagggct ggggcaggc   1140

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Phe Ser Phe Leu Arg Arg Lys Thr Asp Phe Phe Ile Gly Gly Glu Glu
        35   40   45

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Gly Met Ala Glu Lys Leu Ile Thr Gln Thr Phe Ser His His Asn Gln
    50                  55                  60

Leu Ala Gln Lys Thr Arg Arg Glu Lys Arg Ala Arg Gln Glu Ala Glu
65                  70                  75                  80

Arg Arg Glu Lys Ala Glu Arg Ala Ala Arg Leu Ala Lys Glu Ala Lys
                85                  90                  95

Ser Glu Thr Ser Gly Pro Gln Ile Lys Glu Leu Thr Asp Glu Glu Ala
                100                 105                 110

Glu Arg Leu Gln Leu Glu Ile Asp Gln Lys Lys Asp Ala Glu Asn His
            115                 120                 125

Glu Ala Gln Leu Lys Asn Gly Ser Leu Asp Ser Pro Gly Lys Gln Asp
    130                 135                 140

Thr Glu Glu Asp Glu Glu Glu Asp Glu Lys Asp Lys Gly Lys Leu Lys
145                 150                 155                 160

Pro Asn Leu Gly Asn Gly Ala Asp Leu Pro Asn Tyr Arg Trp Thr Gln
                165                 170                 175

Thr Leu Ser Glu Leu Asp Leu Ala Val Pro Phe Cys Val Asn Phe Arg
            180                 185                 190

Leu Lys Gly Lys Asp Met Val Val Asp Ile Gln Arg Arg His Leu Arg
        195                 200                 205

Val Gly Leu Lys Gly Gln Pro Ala Ile Ile Asp Gly Glu Leu Tyr Asn
    210                 215                 220

Glu Val Lys Val Glu Glu Ser Ser Trp Leu Ile Glu Asp Gly Lys Val
225                 230                 235                 240

Val Thr Val His Leu Glu Lys Ile Asn Lys Met Glu Trp Trp Ser Arg
            245                 250                 255

Leu Val Ser Ser Asp Pro Glu Ile Asn Thr Lys Lys Ile Asn Pro Glu
            260                 265                 270

Asn Ser Lys Leu Ser Asp Leu Asp Ser Glu Thr Arg Ser Met Val Glu
        275                 280                 285

Lys Met Met Tyr Asp Gln Arg Gln Lys Ser Met Gly Leu Pro Thr Ser
    290                 295                 300

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Pro Glu Met Asp Phe Ser Lys Ala Lys Phe Asn
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                20                  25                  30

Phe Ser Phe Leu Arg Arg Lys Thr Asp Phe Phe Ile Gly Gly Glu Glu
            35                  40                  45

Gly Met Ala Glu Lys Leu Ile Thr Gln Thr Phe Asn His His Asn Gln
        50                  55                  60

Leu Ala Gln Lys Ala Arg Arg Glu Lys Arg Ala Arg Gln Glu Thr Glu
65                  70                  75                  80

Arg Arg Glu Lys Ala Glu Arg Ala Ala Arg Leu Ala Lys Glu Ala Lys
                85                  90                  95

Ala Glu Thr Pro Gly Pro Gln Ile Lys Glu Leu Thr Asp Glu Glu Ala
            100                 105                 110

Glu Arg Leu Gln Leu Glu Ile Asp Gln Lys Lys Asp Ala Glu Asn His
        115                 120                 125

Glu Val Gln Leu Lys Asn Gly Ser Leu Asp Ser Pro Gly Lys Gln Asp
    130                 135                 140

Ala Glu Glu Glu Glu Asp Glu Glu Asp Glu Lys Asp Lys Gly Lys Leu
145                 150                 155                 160

Lys Pro Asn Leu Gly Asn Gly Ala Asp Leu Pro Asn Tyr Arg Trp Thr
                165                 170                 175

Gln Thr Leu Ser Glu Leu Asp Leu Ala Val Pro Phe Arg Val Ser Phe
            180                 185                 190

Arg Leu Lys Gly Lys Asp Val Val Val Asp Ile Gln Arg Arg His Leu
        195                 200                 205

Arg Val Gly Leu Lys Gly Gln Ala Pro Val Ile Asp Gly Glu Leu Tyr
    210                 215                 220

Asn Glu Val Lys Val Glu Glu Ser Ser Trp Leu Ile Glu Asp Gly Lys
225                 230                 235                 240

Val Val Thr Val His Leu Glu Lys Ile Asn Lys Met Glu Trp Trp Asn
                245                 250                 255

Arg Leu Val Thr Ser Asp Pro Glu Ile Asn Thr Lys Lys Ile Asn Pro
                260                 265                 270
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Glu Asn Ser Lys Leu Ser Asp Leu Asp Ser Glu Thr Arg Ser Met Val
        275   280   285

Glu Lys Met Met Tyr Asp Gln Arg Gln Lys Ser Met Gly Leu Pro Thr
    290   295   300

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305   310   315   320

His Pro Glu Met Asp Phe Ser Lys Ala Lys Phe Asn
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        20   25   30

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        35   40   45

Val Ser Ala Asn Leu Lys Gly Arg Asp Leu Asp Val Val Leu Lys Lys
    50   55   60

Asp Ser Ile Lys Val Lys Val Lys Gly Glu Asn Gly Glu Val Phe Ile
65   70   75   80

Asp Gly Gln Phe Pro His Pro Ile Lys Pro Ser Glu Ser Ser Trp Thr
                85   90   95

Leu Glu Thr Thr Ser Lys Pro Pro Gly Lys Glu Val Ser Ile His Leu
            100   105   110

Asp Lys Val Asn Gln Met Glu Trp Trp Ala His Val Val Thr Thr Ala
        115   120   125

Pro Lys Ile Asp Val Ser Lys Ile Thr Pro Glu Asn Ser Ser Leu Ser
    130   135   140

Asp Leu Asp Gly Glu Thr Arg Ala Met Val Glu Lys Met Met Tyr Asp
145   150   155   160

Gln Arg Gln Lys Glu Met Gly Ala Pro Thr Ser Asp Glu Gln Arg Lys
                165   170   175

Met Asp Ile Leu Lys Lys Phe Gln Lys Glu His Pro Glu Met Asp Phe
            180   185   190

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Gly Lys Val His Leu Lys Asn Met Glu Trp Trp Val Pro Ile Lys Ile
            35   40   45

Pro Glu Asn Ser Leu Ser Asp Leu Asp Glu Thr Arg Met Tyr Glu Lys
    50   55   60

Met Met Tyr Asp Gln Arg Gln Lys Met Gly Pro Thr Ser Asp Glu Gln
65   70   75   80

Lys Ile Leu Lys Lys Phe His Phe Glu Met Asp Phe Ser
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1   5   10